

Test Pits at Buckman Diversion Site

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DATE: April 9, 2001

This memorandum summarizes the results and findings of a preliminary evaluation of subsurface soils encountered in test pits excavated in the vicinity of the proposed diversion site, along the east bank of the Rio Grande at Buckman.

At 9:00 a.m. on April 9, 2001, Mike Sanderson and I met the contractor at end of Buckman Road and the east bank of the Rio Grande. A total of three test pits were excavated with a John Deere backhoe to a depth of approximately 6 to 8 feet below ground surface. The first excavation was located about 20 feet east of the river at the proposed diversion intake location. The second excavation was located approximately 30' east and 40' north of the proposed diversion intake location. A third excavation was made about 40' east of the riverbank and 500' south of the proposed diversion intake location. Approximate locations of the three test pits are shown in Appendix A. Water and subsurface material (similar at all sites) was encountered in all three excavations. A brief description of the subsurface material encountered in each excavation is as follows:

Test Pit #1 - The top 2 feet of material was sandy, with large volcanic cobbles (8 to 12-inch in size) representing 10-15% of the excavated material. Free water was encountered about 3.5-feet below grade (coinciding with water surface in the river). The material from 2 to 6-feet below grade was relatively uniform comprised of clean, coarse sand, gravelly with some cobbles up to 4-inch in size. Cobble-sized material comprised up to 5% of the excavated material from 2 to 6-feet below grade. No large rocks of volcanic origin, as seen in the top 2-feet of material, were present to any noticeable extent below 2-feet depth. Photographs showing the excavation and materials encountered in Test Pit #1 are included in Appendix B.

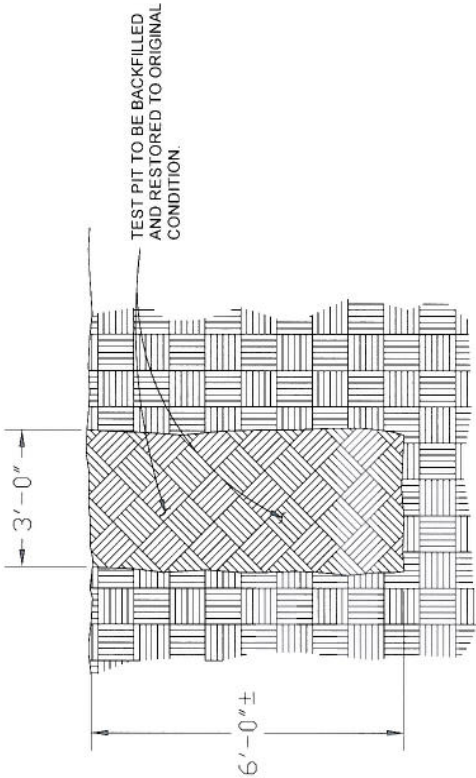
Test Pit #2 - The top 1-foot of material was sandy, with large volcanic cobbles (8 to 12-inch in size) representing 10-15% of the excavated material. Free water was encountered about 4-feet below grade (coinciding with water surface in the river). The material from 1 to 6-feet below grade was relatively uniform and similar to that seen in Test pit #1, comprised of clean, coarse sand, gravelly with

some cobbles (up to 4-inch in size). Cobble-sized material comprised up to 5% of the excavated material from 1 to 6-feet below grade. No large rocks of volcanic origin, as seen in the top 1-foot of material, were present to any noticeable extent below the 1-foot depth. Photographs showing the excavation and materials encountered in Test Pit #2 are included in Appendix C.

Test Pit #3 - The top 3 to 4-feet of material was sandy, with large volcanic cobbles (4 to 8-inch in size) representing 5-10% of the excavated material. Free water was encountered about 7-feet below grade (coinciding with water surface in the river). The material from 4 to 6-feet below grade was relatively uniform comprised of clean coarse sand, gravelly with some cobbles up to 4-inch in size. Cobble-sized material comprised up to 5% of the excavated material from 4 to 6-feet below grade. No large rocks of volcanic origin, as seen in the top 4-feet of material, were present to any noticeable extent below 4-foot depth. The material below 6-foot became more gravelly with cobble-sized material (2 to 4-inch in size) comprising about 15 to 20% of the material. Cobbles encountered below 6-foot depth were clean, well-rounded rocks typical of river run material. Test Pit #3 is located south of the main arroyo channel emptying into the river from the east. Photographs showing the excavation and materials encountered in Test Pit #3 are included in Appendix D.

Appendix A

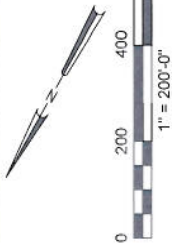
Test Pit Locations



TYPICAL TEST PIT SECTION
NTS

LEGEND

- = TEST PIT(S) LOCATION
- = ACCESS ROUTE
- = PROPERTY BOUNDARY



PRELIMINARY
NOT FOR
CONSTRUCTION

DSGN	
DR	
CHK	
APVD	

NO.	DATE
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REVISION	BY	APVD
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VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.

CH2MHILL

APPENDIX A

TEST PIT LOCATIONS
APRIL 9, 2001

LAS CAMPANAS DE SANTA FE
PROPOSED LAS CAMPANAS' WATER DIVERSION
IN THE RIO GRANDE AT BUCKMAN ROAD

Appendix B

Test Pit No. 1



Test Pit #1 – Start of Excavation



Test Pit #1 – Excavated Material



Test Pit #1 - Excavation



Test Pit #1 – Excavated Material



Test Pit #1 - Excavation

Appendix C

Test Pit No. 2



Test Pit #2 – Excavated Material



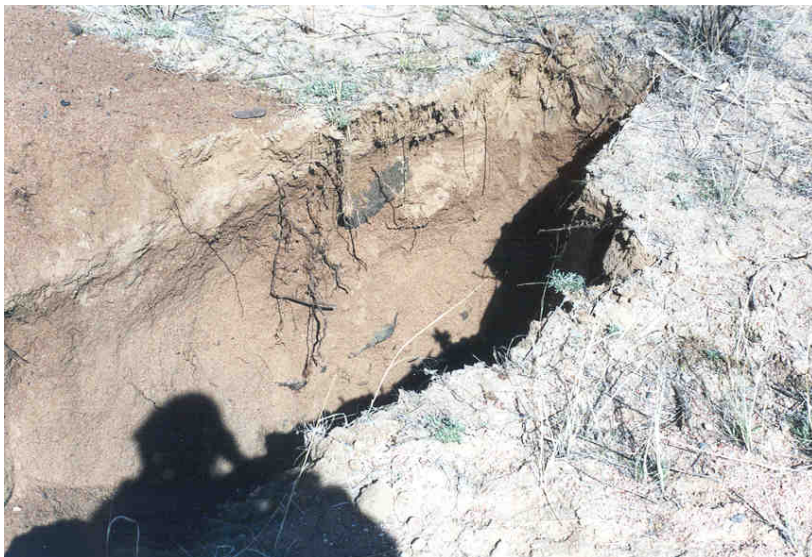
Test Pit #2 - Excavation

Appendix D

Test Pit No. 3



Test Pit #3 – Excavated Material



Test Pit #3 - Excavation



Test Pit #3 - Excavation



Test Pit #3 - Excavation



Test Pit #3 - Excavation



Test Pit #3 - Excavation